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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MOTOROLA INC
600 NORTH US HIGHWAY 45
ROOM AS437
LIBERTYVILLE, IL 60048-5343

EXAMINER

CRAVER, CHARLES R

ART UNIT PAPER NUMBER

2682

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,160

Applicant(s)

ABBASI ET AL.

Examiner

Charles R Craver

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Pennanen et al, US Pat 6,556,812.

Claim 19: Pennanen discloses a wireless communication handset (301)

comprising

a handset body with inherent communications circuitry connected to an antenna (col 3 line 66-col 4 line 23),

a housing portion (400), mountable on a portion of the handset body adjacent to a portion of the antenna (FIG 6), inherently loading the antenna with a resonance frequency when mounted on the body using a loading member (401) disposed between the housing portion and the antenna (FIG 4), comprising a conductive material spaced by a dielectric (col 4 line 44-col 5 line 18).

Claim 20: Pennanen discloses that the antenna is an internal antenna (col 4 lines 2-10).

Claim Rejections - 35 USC 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pennanen et al.

Claims 1 and 10: Pennanen discloses a system for a wireless communication handset (301) comprising

a handset body with inherent communications circuitry connected to an antenna (col 3 line 66-col 4 line 23),

a first and second housing portion having first and second differing corresponding shapes (col 4 line 44-col 5 line 18, col 5 lines 19-27), mountable on a common portion of the handset body (FIG 6), each inherently loading the antenna with a resonance frequency when mounted on the body.

Pennanen fails to disclose that the loads/frequencies are the same, or that the housing portions are interchangeable.

However, since Pennanen does disclose that the two embodiments are each separable from the body (col 5 lines 49-54), it is noted that both designs could be used

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and attached interchangeably since they both have the exact same means for attachment, and only differ in the shape of the top portion which is not directly connected to the device body. Further, Pennanen states that the only difference between the two embodied designs is the orientation of the conductive antenna element (see col 5 lines 20-28), which would lead one of ordinary skill in the art to determine that the loads and resonance frequencies on the internal antenna of the device would be the same.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the antenna loading would have been the same, and to utilize the two embodied antenna devices interchangeably so as to provide two different antenna coverage characteristics given applications, as Pennanen discloses different bandwidth shapes/flatness (col 5 line 66-col 6 line 4). Further regarding claim 10, Pennanen discloses that the housing portions may comprise a number of different materials (col 6 lines 21-30).

Claims 2 and 14: Pennanen discloses that the antenna is an internal antenna, and that the first and second housing portions each have first and second portions which are adjacent to the internal antenna when mounted on the body (406, 506), and each have a first and second portion opposite the other portions (e.g. 402) which differ between the first and second housing portions (FIG 4, 5). **Claim 3:** Pennanen discloses that the internal antenna is a PIFA (col 4 lines 7-16). **Claim 4:** Pennanen discloses that the two have substantially the same loading characteristic, as shown above regarding claim 1; further, the loading feature is disclosed between the housing portion and the

internal antenna (col 4 lines 44-66). **Claim 5:** Pennanen discloses that the first and second housing portions may vary in the part adjacent the internal antenna (see FIGS 5 and 6, elements 406 and 506, col 5 lines 21-27). **Claims 6-8:** Pennanen discloses that the loading feature e.g. 501 may be a member disposed on an internal side of a housing portion of a housing portion and the internal antenna, comprising a conductive material and a dielectric material (col 4 lines 44-54, see FIG 6). **Claim 9:** while not a recessed portion, it would have been obvious to one of ordinary skill in the art at the time of the invention to recess the inner side of the housing portion to fit the conductive and dielectric materials based on the size of them and the angle which the top portion makes versus the phone body. **Claims 11 and 13:** if using different materials as suggested by Pennanen, such would have inherently different finishes based on plating etc. (e.g. the material applied to the housing of instant claim 13) and loading characteristics particular to that material. **Claim 12:** Pennanen discloses that the housing portions have the same general shape (FIGS 4 and 5). **Claim 15:** Pennanen discloses that the response may depend on the dimensions of the parts (inherently including thickness, col 6 lines 39-42). **Claims 16-18:** please see the rejection of claims 6-8 above.

Response to Arguments

5. Applicant's arguments filed 1-12-04 have been fully considered but they are not persuasive.

Regarding claim 19, the examiner upholds the rejection under 35 USC 102 above. First, the characterization by the applicant that the antenna element 401 of

Pennanen is an antenna ground plane is incorrect; Pennanen states that element 401 is a conductive antenna element which is connected to a ground plane 403. The purpose of the external antenna element is to couple to the internal antenna of the mobile unit, as stated in col 2 lines 20-29 of Pennanen. Note also in col 8 lines 52-56 which states that the external antenna couples to the internal antenna with a better coupling coefficient than the prior art. This coupling coefficient of "between -1.6 dB and -1.9 dB" would inherently cause a loading of the internal antenna as mentioned above as loading occurs when two antennas are coupled adjacent to one another.

Regarding claim 20, Pennanen discloses an internal antenna coupled to a second antenna, which as shown above, is a loading member.

Regarding claim 1, Pennanen discloses a number of different antenna loading members, see FIGS 4 and 5. Pennanen specifically discusses the differences between the two, and that both detachably mount on the body of the mobile device for coupling to the internal antenna, see col 5 lines 28-42. Pennanen even discloses that the loading members are "temporarily attached", see lines 28-29. Looking at FIGS 4 and 5, it is noted that both antennas have an overall housing with a slightly different shape (the housing in FIG 5 has holes). FIG 6, as noted above, shows that both are detachably mountable to a common portion (the back) of the handset body. As such, both antennas detachably mounted are read as housing portions as when they are mounted they become part of the body of the telephone. Given the detachable nature of both embodiments, and that both are usable for different characteristics, it is asserted that one of ordinary skill in the art at the time of the invention would have been motivated to

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use either or both embodiments of the antenna loading member; Pennanen even states that the two were compared in an experiment (col 5 line 66-col 6 line 4), in which case both would have been separately detachably connected to a phone at different times to test the apparatus. As such, the two antenna loading members would have been interchanged in such an experiment, which shows that it would have been obvious to one of ordinary skill in the art that the two would have been interchangeable.

Regarding claim 10, note the statements above regarding housings. Second, claim 1 fails to recite different loading characteristics, such a limitation is present in claim 10, and claim 10 states first and second materials having different antenna loading characteristics. Note above in the rejection of claim 10 that Pennanen discloses that the antenna loading member antenna portions may be made of different materials, which would inherently have different impedances. Note also that Pennanen discloses that the resonant frequency of either loading member should be as close as possible to the internal antenna (col 6 line 66-col 7 line 10), and given that the internal antenna would be of a fixed resonant frequency then one of ordinary skill in the art would have noted the need for both different loading member designs to have the same resonant frequency, namely that of the internal antenna.

Regarding claims 2 and 14, the examiner notes above that the overall loading member is a housing portion. The ground plane is read as an internal portion because at the upper part of the antenna loading member it lies beneath the antenna portion.

Regarding claim 3, Pennanen discloses that the internal antenna is a PIFA, see col 4 lines 2-16. Regarding claims 4 and 14, it is noted above that the antenna loading

means may have the same characteristics, which could include a loading characteristic. While the applicant asserts that Pennanen does not disclose an antenna loading feature that compensates for a difference between auxiliary antenna loading characteristics, claim 4 states that the auxiliary antennas have the same loading characteristics. Regarding claim 5, Pennanen discloses that the first and second housing portions may vary in the shape/size of the part adjacent the internal antenna (see FIGS 5 and 6, elements 406 and 506, col 5 lines 21-27). Regarding claims 6-8 and 16-18, since the loading feature includes the antenna means 501, such is a loading member. Second, the element 501 is disposed between an internal (facing the phone) side of the loader 500 and the back side of the phone itself (see FIG 6). Note also that none of the claims state that the loading member is inside the telephone housing, and that the antenna loader of Pennanen is made of both a dielectric and a conductor, as neither claim 7 or 8 states that the loading device is comprised *completely* of either.

Regarding claim 9, note that the thickness of the material used would necessitate a recessed portion if the thickness was so much that it would affect the tilt angle and change the response of the system (col 6 lines 39-65). Given such a problem to solve, one of ordinary skill in the art would have been motivated to keep the antenna material as thin as possible using a recessed portion. Regarding the applicant's suggestion of hindsight, note also that that a court or examiner may find a motivation to combine prior art references in the nature of the problem to be solved. See Pro-Mold, 75 F.3d at 1573; Display Techs., Inc. v. Paul Flum Ideas, Inc., 282 F.3d 1340, 1346-47 (Fed. Cir. 2002); In re Huang, 100 F.3d 135, 139 n.5 (Fed. Cir. 1996).

Regarding claim 11, it is noted above that different materials are taught which would have different loading characteristics. The applicant asserts that the examiner has argued that the materials would have the same characteristics, however, such is incorrect; the examiner has asserted that the overall loading of the loading members may be the same. Pennanen discloses that the only difference between the two embodiments are the orientation and the holes, but discloses many different materials may be used for the antenna loading means. Regarding claim 12, the examiner notes that the embodiments of FIGS 4 and 5 have substantially the same shape. Regarding claim 13, Pennanen discloses that the ground plane of the housing (e.g. portion 406) may be a metal trace on a PCB (col 6 lines 21-38), which would be a metallic finish.

Regarding claim 15, Pennanen discloses that the response may depend on the dimensions of the parts as noted above, which would include the thickness and size of parts.

As such, the examiner upholds the rejection above.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al discloses antenna loading and testing means.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Or:

(703) 872-9314 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington VA, sixth floor (receptionist).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Craver whose telephone number is (703) 305-3965.

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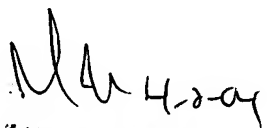
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (703) 308-6739.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

cc

C. Craver

2 April 2004


CHARLES CRAVER
PATENT EXAMINER